The Impact of Killing on Mental Health Symptoms and Functioning Veterans of War

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Background

- **77% to 87% of Operation Iraqi Freedom (OIF) Army/Marines reported directing fire at the enemy**
- **48% to 65% reported being responsible for the death of an enemy combatant**
- **14% to 28% reported being responsible for the death of a noncombatant.**

(Hoge et al., 2004)

Background

- **Few scientific examinations of the scope and impact of killing in war**

- **One study examined relations between killing and PTSD**
- **We extend findings by exami**
  - **1) Associated PTSD Sxs**
  - **2) Other MH Outcomes**
  - **3) Functional Impairment**
  - **4) Current Violent Behaviors**

(King et al., 1996; Macnair, 2002)

Methods

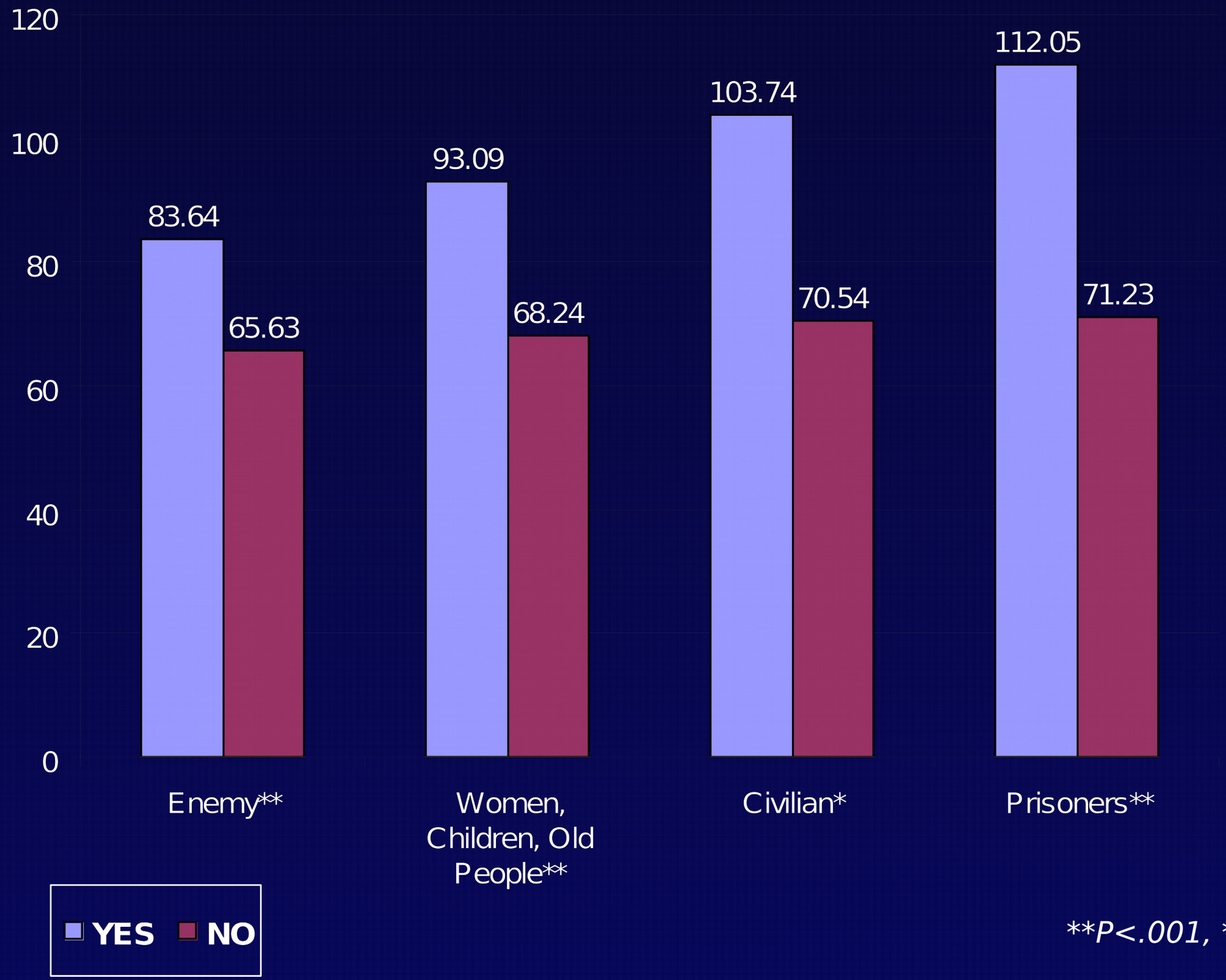
- **NVVRS survey data**
  - **Male Vietnam veterans *(N = 1,200)***
- **The Clinical Interview Sample (CIS)**
  - **Sub-sample of NVVRS (*N* = 259)**
  - **Interviewed in 28 Metropolitan Areas**
  - **Clinical diagnosis and dissociation**
- **Used sampling weights for both groups**

Maguen et al. 2009

Killing Experiences

- 47% of veterans killed or think they killed someone during the war
- 13% reported that they injured or killed women, children and/or the elderly

MEAN PTSD SCORE BY KILLING ITEM



***P<.001, *P<.05*

Results

- **Controlling for demographic variables and general combat experiences (GCE), in the full models, GCE no longer predicted:**
  - **PTSD Symptoms**
  - **Dissociation Symptoms**
  - **Functional Impairment**
  - **Violent Behaviors**
- **Killing remained a significant and strong predictor of each outcome**

Final Models for Regressions of PTSD, Functional Impairment, Dissociation and Violent Behaviors

Predictors	MCS		MMPI-PK		Functional Impairment		PDEQ		Violent Behavior	
	β	R^2	β	R^2	β	R^2	β	R^2	β	R^2
Step 1:										
Age	-.00	.05*	.03	.06**	-.09	.05*	-.13	.02	-.10	.03
Black	-.02		-.05		-.10		-.02		-.07	
Hispanic	.09**		.14**		.05		-.03		.10	
Education	-.18*		-.16**		-.11		.03		.05	
Step 2:										
Combat	.19	.22**	.14	.12*	.12	.09**	.05	.12**	.16	.05*
Step 3:										
Kill Enemy	.40**	.32**	.18	.23**	.13	.13**	.45**	.21**	.36*	.10**
Kill Others	.47**		.43**		.27*		.44**		.30*	

Note: All βs are for final model and R^2 statistics are for each step.
*$p < .05$ **$p < .01$

Methods

- **Retrospective analysis of Soldier Wellness Assessment Program (SWAP) data**
- **Extension of standard Post-Deployment Health Reassessment program (PDHRA)**
- **Global health assessment, including mental health**
- **All Soldiers 90 to 180 days post-deployment (*N* = 2797)**

Experiences in the War Zone

- 16% reported being injured
- 77% reported seeing dead bodies
- 56% reported witnessing killing
- 40% reported killing in combat

Predictors of PTSD, Depression and Alcohol Use

Predictors	PTSD			Depression			Alcohol Use		
	β	T	R^2	β	T	R^2	β	T	R^2
Age	- .02	- .83	.	- .01	- .43	.	-.18**	-8.62	.
Education	09**			04**			10**		
Ethnicity	- .03	-1.46		- .09**	- 4.49		-.07**	-3.42	
Gender	.05*	2.56		.04*	2.29		-.02	-1.30	
Spouse	.08**	4.46		.09**	4.41		-.06**	-3.07	
Combat	.03	1.67		.02	.85		- .06**	-3.22	
Kill	.26**	11.62		.14**	6.13		.10**	4.56	
	.07**	3.31		.02	1.05		.07**	3.10	

Predictors of Anger and Relationship Problems

Predictors	Anger		Relationship Problems		
	β R^2	T	Wald CI	OR	95%
Age	- .09**	- 4.01	.03	1.00	.
Education	.06**		98-1.02		
Ethnicity	- .06**	-2.89	15.20**	.79	.
Gender	.02	1.09	70-.89		
Spouse	.05*	2.49	2.16	1.20	.
Combat	.02	1.01	94-1.51		
Kill	.12**	5.08	7.65**	1.87	
	.10**	4.41	1.20-2.91		
			56.61**	4.48	
			3.02-6.61		
			.53	1.06	.
			91-1.22		

Future Directions and Clinical Implications

- Continue to focus on impact of taking another life in the context of combat, especially with prospective, longitudinal designs

- Evaluate questions related to trauma type in greater detail, including impact on PTSD treatment

- Assess killing in PTSD evaluations, including the type and context of killing; this must be done in a sensitive and supportive fashion.

- Important to evaluate impact on a case by case basis and understand context.

Future Directions and Clinical Implications

- **Designing a measure that evaluates maladaptive cognitions related to killing based on focus groups we have conducted with veterans who have killed in war.**

- **Augmenting CBT evidence-based treatments to include treatment modules addressing self-forgiveness and healing from moral injury more explicitly.**

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